

CLAIMS

I claim:

- 5 1. A continuous composter for continuously processing organic waste material, the waste material being processed from a generally heterogeneous state into a generally homogenous state, said composter comprising:
- a support frame;
 - 10 - a container defining a first longitudinal axis and having a sidewall, said container rotatably mounting on said support frame about said first axis, said sidewall defining an inner chamber having located therein an amount of the heterogeneous waste material for circulation thereof;
 - 15 - an agitator defining a second longitudinal axis thereof, said agitator rotatably mounting within said inner chamber about said second axis, said second axis being substantially parallel to and in a spaced apart relationship relative to said first axis;
 - said agitator being located to selectively receive an amount of the
20 circulated waste material from said rotating container, to separate said heterogeneous waste material into the homogenous waste material, and to aerate the homogenous waste material with air contained within said inner chamber.
- 25 2. The composter of claim 1, wherein said container and said agitator rotate with first and second rotational speeds respectively, said second rotational speed being larger than said first rotational speed.
3. The composter of claim 2, wherein said second rotational speed is
30 at least two orders of magnitude larger than said first rotational speed.

4. The composter of claim 1, wherein said container includes longitudinal ribs extending inwardly from said sidewall.
- 5 5. The composter of claim 4, wherein said ribs extend substantially radially from said sidewall.
6. The composter of claim 5, wherein each of said ribs is generally radially shaped so as to form a scoop to circulate the heterogeneous waste material therein.
- 10 7. The composter of claim 6, wherein said scoop includes a first segment extending generally radially from said sidewall and a second segment extending inwardly and generally angularly from said first segment relative to a radial direction.
- 15 8. The composter of claim 4, wherein said container has generally opposed first and second longitudinal end walls, said ribs extending generally between said first and second end walls.
- 20 9. The composter of claim 8, wherein said ribs extend generally helically between said first and second end walls about said first axis.
10. The composter of claim 8, wherein said ribs extend generally axially between said first and second end walls.
- 25 11. The composter of claim 10, wherein each of said ribs selectively extends generally axially along a longitudinal portion of said sidewall.
- 30 12. The composter of claim 1, wherein said container is generally cylindrical in shape.

13. The composter of claim 4, wherein said agitator is located adjacent said ribs to successively receive an amount of said circulated waste material therefrom and to separate said waste material into the
5 homogenous waste material.

14. The composter of claim 1, wherein said container and said agitator rotate are commonly rotatable relative to each other about said first and second axes respectively.
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15. The composter of claim 4, wherein said ribs are generally equally circumferentially spaced apart from one another about said first axis.

16. The composter of claim 1, further including an air circulation means for allowing air to get within said inner chamber.
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17. The composter of claim 16, wherein said air circulation means includes an air inlet connectable to said container, said air inlet being selectively partially closable by an operator.
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18. The composter of claim 17, wherein said air circulation means includes a blower mechanism to selectively blow air through said air inlet into said inner chamber.

19. The composter of claim 18, wherein said container has generally opposed first and second longitudinal end walls with the waste material circulating within said inner chamber from said first end wall to said second end wall, said air inlet being located adjacent said second end wall, said air circulation means including an air outlet for allowing air
25 within said inner chamber to flow out therefrom, said air outlet being
30 connectable to said container adjacent said first end wall.

20. The composter of claim 1, wherein said container has generally opposed first and second longitudinal end walls, said agitator extending generally between said first and second end walls.

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21. The composter of claim 20, wherein said agitator is substantially cylindrical in shape.

22. The composter of claim 21, wherein said agitator has an outer
10 peripheral wall for selectively receiving an amount of said circulated waste material from said rotating container and separating said waste material into the homogenous waste material.

23. The composter of claim 22, wherein said agitator includes
15 protrusions extending outwardly from said outer peripheral wall.

24. The composter of claim 23, wherein said protrusions extend substantially radially from said outer peripheral wall.

20 25. The composter of claim 24, wherein said protrusions are generally helically positioned on said peripheral wall about said second axis.

26. The composter of claim 25, wherein said protrusions have a generally triangular shape.

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27. The composter of claim 25, wherein said protrusions have a substantially shark-fin-like shape and are generally transverse relative to said second axis.

28. The composter of claim 25, wherein said protrusions have a generally rectangular shape and are generally parallel relative to said second axis.

5 29. The composter of claim 1, wherein said container has generally opposed first and second longitudinal end walls, said composter further including:

- feeding means connectable to said first end wall for feeding the waste material therethrough into said inner chamber;
- 10 - collecting means connectable to said second end wall for collecting the processed waste material therethrough from said inner chamber.

30. The composter of claim 29, wherein said feeding and collecting
15 means continuously feed and collect said waste material into and from said inner chamber, respectively.

31. The composter of claim 30, wherein said feeding and collecting
20 means are mounted on said frame.

32. The composter of claim 31, wherein said container and said agitator circulate the waste material within said inner chamber from said first end wall to second end wall.

25 33. The composter of claim 32, wherein said first end wall defines a first opening extending therethrough, said feeding means including a feeding mechanism connectable to said first end wall and extending generally through said first opening for feeding said container with the waste material.

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34. The composter of claim 33, wherein said feeding means includes a feeder wall connectable to said first end wall and substantially closing said first opening, said feeding mechanism mounting on said feeder wall and extending therethrough.

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35. The composter of claim 34, wherein said feeding mechanism includes a feed compartment for receiving waste material therein and a feed conveyor connected thereto, said feeding conveyor being in fluid communication with both said feed compartment and said inner chamber
10 for conveying the waste material from said feed compartment to said container.

36. The composter of claim 35, wherein said feed conveyor is a feed screw.

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37. The composter of claim 34, wherein said second end wall defines a second opening extending therethrough, said collecting means including a collecting mechanism connectable to said second end wall and extending generally through said second opening for collecting the
20 processed waste material from said container.

38. The composter of claim 37, wherein said collecting means includes a collector wall connectable to said second end wall and substantially closing said second opening, said collecting mechanism
25 mounting on said collector wall and extending therethrough.

39. The composter of claim 38, wherein said agitator is rotatably mounted on both said feeder wall and said collector wall.

30 40. The composter of claim 38, wherein said collecting mechanism includes a receptacle compartment located inside said inner chamber for

selectively collecting the processed waste material therefrom and a collector chute connected thereto, said collector chute extending through said collector wall for transferring the collected processed waste material from said receptacle compartment out of said container.

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41. The composter of claim 1, wherein said sidewall is generally insulated to thermally isolate said inner chamber from the outside.

42. The composter of claim 41, wherein said container has generally opposed first and second longitudinal end walls, said first and second end walls being generally insulated to thermally isolate said inner chamber from the outside.

43. The composter of claim 1, wherein said container defines generally opposed longitudinal container ends thereof, said composter further including generally opposed feeder and collector walls secured to said support frame adjacent a respective of said container ends, said feeder and collector walls rotatably supporting said agitator.

44. The composter of claim 43, further including:

- feeding means connectable to said feeder wall for continuously feeding the waste material therethrough into said inner chamber;
- collecting means connectable to said collector wall for continuously collecting the processed waste material therethrough from said inner chamber.

45. A continuous composter for continuously processing organic waste material, the waste material being processed from a generally heterogeneous state into a generally homogenous state, said composter comprising:

- a support frame;

- 5 - a container defining a container longitudinal axis, a sidewall wall and generally opposed first and second longitudinal end walls, said container defining an inner chamber, said container rotatably mounting on said support frame about said container axis for circulating the heterogeneous waste material within said inner chamber;
- 10 - an agitator defining an agitator outer surface and an agitator longitudinal axis, said agitator axis being generally parallel to and in a spaced apart relationship relative to said container axis, said agitator being positioned, configured and sized to define a generally unobstructed portion of said inner chamber extending longitudinally therein adjacent said agitator, said agitator rotatably mounting on said frame about said agitator axis for selectively and projectingly homogenizing the circulated heterogeneous waste material from the container into said chamber unobstructed portion;
- 15 - feeding means extending through to said first end wall for continuously feeding the heterogeneous waste material into said inner chamber;
- 20 - collecting means extending through said second end wall for continuously collecting the processed homogenous waste material from said chamber.

46. The composter of claim 45, further including generally opposed
 25 feeder and collector walls secured to said support frame adjacent said first and second container end walls, respectively, said feeder and collector walls extending generally through said first and second end walls, respectively, and rotatably supporting said agitator.